

# Standard Product Capabilities

Pump solutions from a World Leader



## MD/WMD Series

Compact, quiet, highly efficient

Iwaki America, the world leader in small magnetically coupled centrifugal pump technology, offers the premier line of non-metallic centrifugal pumps.

Extraordinarily high efficiencies make WMD & MD the clear choice in almost every process, recirculation or transfer application. Choose standard alumina ceramic bearing materials and polypropylene, or optional SiC (silicon carbide) and ETFE (fluoropolymer) for your most aggressive or highest purity requirement.

Do you require compact, quiet, highly efficient pumps for your Laser, Chiller or Blood Analyzer Applications? Iwaki America pumps are compact, offer higher pressure, AND last longer than any traditional offerings.

**Motor Matching** - Offering more motor/pump configurations than any other manufacturer easily allows tailored pump applications. Premium, high efficiency motors are used throughout the line. Totally enclosed, permanent split capacitor motors are compact, cool and economical. Tolerance to voltage variation without overheating and 50/60 Hz operation allows the product to be used in a worldwide market. PSC or shaded pole AC motors are standard. Brushed and brushless motors are available for DC applications.

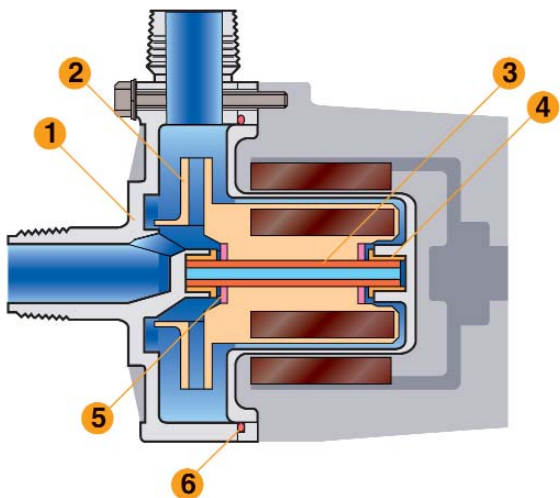


*Think twice. Spec once.*

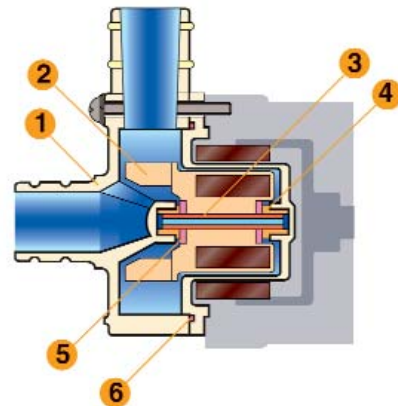
### Wet End Materials

	Part	Polypropylene	Fluoroplastic
1	Casing	GFRPP	CFRETFE
2	Impeller	GFRPP or CFRPP	CFRETFE
3	Spindle	Alumina ceramic	Silicon carbide
4	Bearing	PTFE or PPS	Silicon carbide
5	Thrust Ring	Alumina ceramic or PE	Silicon carbide
6	O-ring *	FKM or EPDM	FKM

\* Other materials available upon request.



Typical MD/WMD -T Threaded connections



Typical MD/WMD -R Hose connections

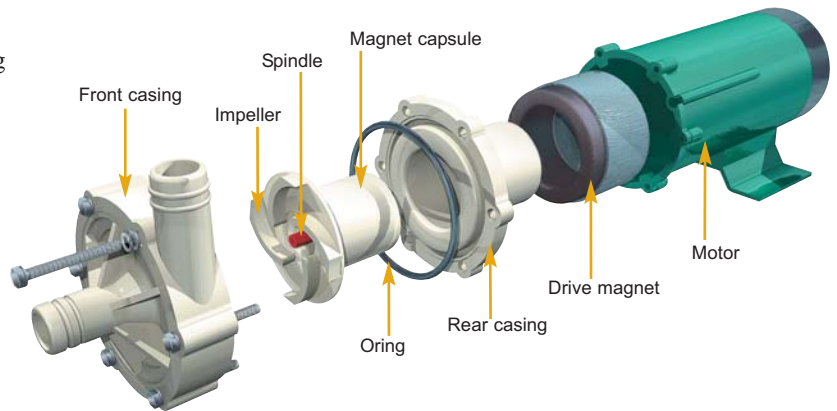


- **Unique internal cooling circuit** - Hollow rotating spindle creates a positive, forced cooling path, lubricating bearing surfaces and actively purging gases & heat. Fluid is not trapped in the rear casing but seeks a low pressure escape to the eye of the impeller through the hollow spindle. Frictional heat is conducted out of the rotating element. Any gas/air is sucked from the rear casing and expelled in a perpetual cycle.

- **Unique double bearing system** allows the cooling circuit liquid to continually “wash” front and rear radial bearings, extending bearing life.

- **Inner rotating assembly** - Alumina ceramic or SiC spindles are bored, turned and highly polished. The precision machined spindles form the center of the driven rotating assembly. The impeller/magnet, keyed off this machined center, is integrally molded with this assembly for perfect concentricity and complete encapsulation of the driven magnet element. In the final step, two precision-ground ceramic thrust rings are press-fitted in perfect parallel alignment onto the front and rear of the rotating assembly. Substantially reduced hydraulic noise is a major feature of all WMD/MD impellers. Great pains are taken in the molding/finishing process to eliminate tangential misalignment. Hardened and plated mold surfaces yield smooth, uniform parts.

- **Balance holes designed to minimize axial thrust** are incorporated into the WMD/MD impellers. Traditionally employed only in large process pumps, balance holes are yet another performance detail characteristic of Iwaki America WMD/MD pump engineering.



- **Radial bearings** - High lubricity fluoropolymer bearings minimize mechanical losses typical of conventional mag drive pumps. High purity SiC radial bearings handle the most aggressive or ultrapure chemistries. Particulate shedding is reduced to the lowest levels of any magnetic drive offering.

- **Thrust surfaces** - Front and rear surfaces aid in hydraulic balance and minimize flashing. Large rear thrust surface guards against axial forces caused by cavitation or gas entrapment. SiC surfaces are “channelled” to remain wetted, even during adverse operating conditions.

- **Drive magnet** - Dynamically balanced barium ferrite drive magnets provide the best magnet torque, dollar-for-dollar. Depending on torque requirements, 4, 6 or 8 pole magnets are used. Die cast magnet carrier creates a fly wheel effect, which adds to the magnet safety factor.

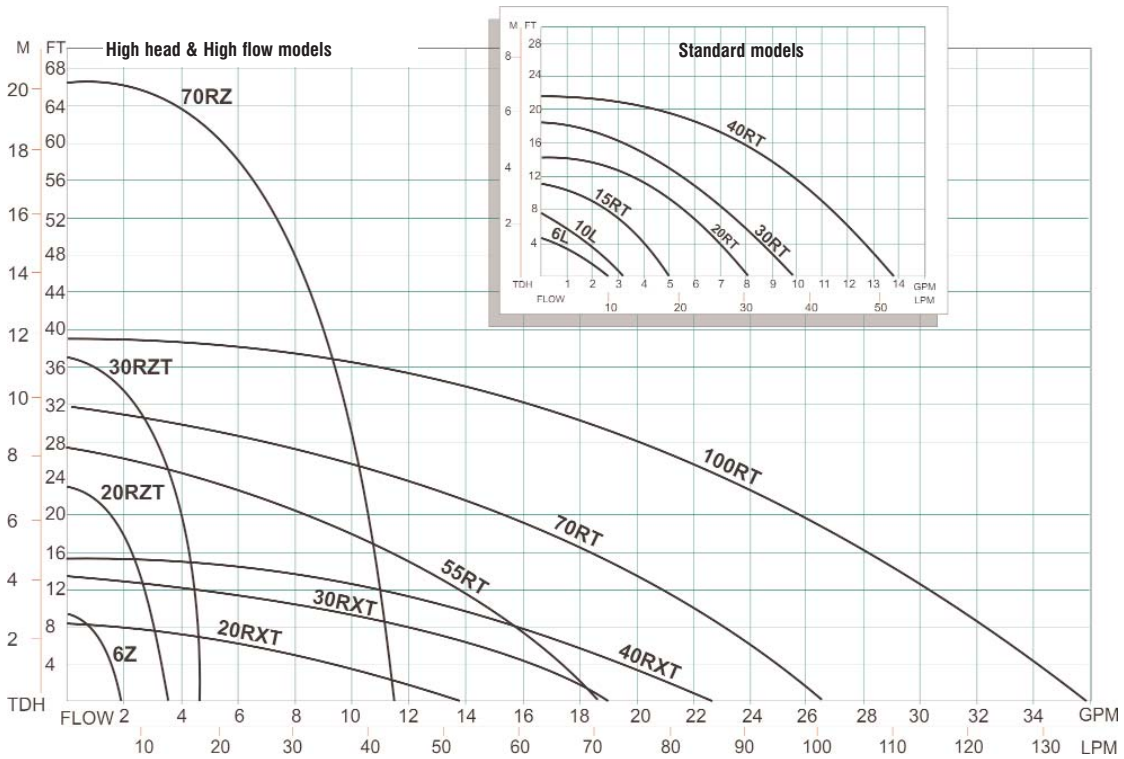
POLYPROPYLENE MODEL	CONNECTIONS		MOTOR OUTPUT (HP)	MOTOR SPEED (RPM)	CURRENT (AMPS)	MAX FLOW (GPM)	MAX HEAD (FT)	MAX SYS. PRESSURE (PSI)	SPECIFIC GRAVITY	WEIGHT (LBS)
	HOSE	NPT								
MD-6	1/2	---	1/250	3100	0.25	2.3	4.5	2.80	1.2	1.8
MD-10	1/2	---	1/125	2900	0.40	3.1	6.8	4.30	1.1	1.6
MD-15R(T)	1/2	1/2	1/75	3100	0.29	5.0	11.1	7.20	1.3	3.5
WMD-15R(T)	1/2	1/2	1/38	3100	0.82	5.0	11.1	7.20	1.3	6.0
MD-20R(T)	5/8	3/4	1/38	3100	0.48	8.2	14.1	9.95	1.1	4.4
WMD-20R(T)	5/8	3/4	1/38	3100	0.48	8.2	14.1	9.95	1.1	7.0
MD-20RX(T)	1	1	1/38	3100	0.50	13.7	8.2	5.69	1.3	4.4
WMD-20RX(T)	1	1	1/38	3100	0.50	13.7	8.2	5.69	1.3	7.0
MD-20RZ(T)	5/8	3/4	1/38	3100	0.53	2.9	22.6	14.22	1.1	4.4
WMD-20RZ(T)	5/8	3/4	1/38	3100	0.53	2.9	22.6	14.22	1.1	7.0
MD-30R(T)	3/4	3/4	1/16	3150	0.80	10.0	17.7	11.60	1.3	7.7
WMD-30R(T)	3/4	3/4	1/16	3150	1.00	10.0	17.7	11.60	1.3	9.0
MD-30RX(T)	1	1	1/16	3150	1.10	19.0	13.5	8.54	1.1	7.7
WMD-30RX(T)	1	1	1/16	3150	1.00	19.0	13.5	8.54	1.1	9.0
MD-30RZ(T)	5/8	3/4	1/16	3150	1.10	4.5	36.1	24.18	1.0	7.7
WMD-30RZ(T)	5/8	3/4	1/16	3150	1.00	4.5	36.1	24.20	1.0	9.0
MD-40R(T)	3/4	3/4	1/12	3200	1.30	13.7	21.3	14.22	1.1	8.6
WMD-40R(T)	3/4	3/4	1/12	3200	1.90	13.7	21.3	14.22	1.1	10.0
MD-40RX(T)	1	1	1/12	3200	1.20	22.4	15.4	9.95	1.1	8.6
WMD-40RX(T)	1	1	1/12	3200	1.90	22.4	15.4	9.95	1.1	10.0
MD-55R(T)	1	1	1/8	3400	1.60	18.4	26.9	17.06	1.2	10.1
MD-70R(T)	1	1	1/4	3400	2.80	25.6	31.8	21.33	1.0	13.2
MD-70RZ(T)	3/4	3/4	2/7	3400	3.80	11.4	66.6	42.70	1.0	13.2
MD-100R(T)	1	1	1/3	3300	3.40	35.6	39.0	25.60	1.2	18.7
WMD-100R(T)	1	1	1/3	3450	*	35.6	39.0	25.60	1.2	*

Pumps with “T” in the model number have NPT connections, models without “T” have hose barb connections.

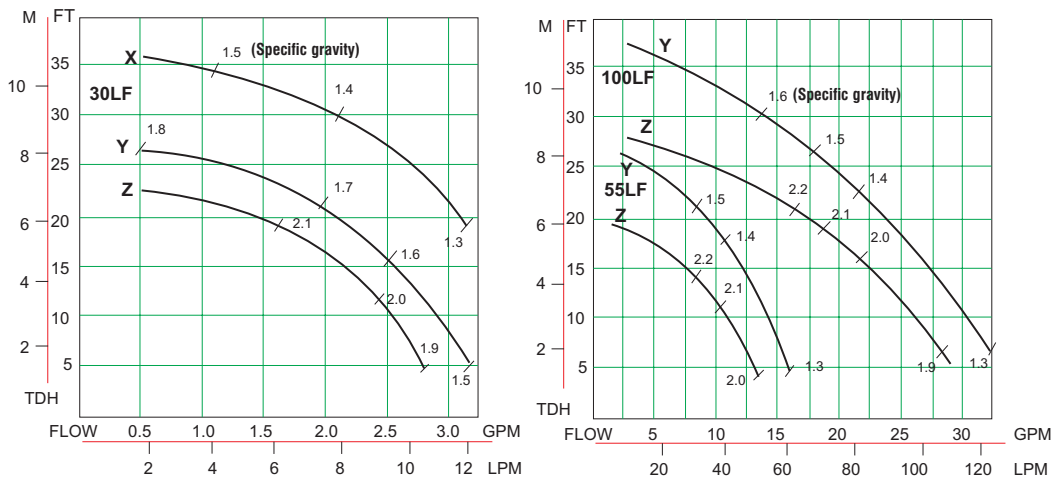
Metric threads available upon request. Please call Iwaki America for details.

\* Varies with motor

### Polypropylene Models



### Fluoroplastic Models



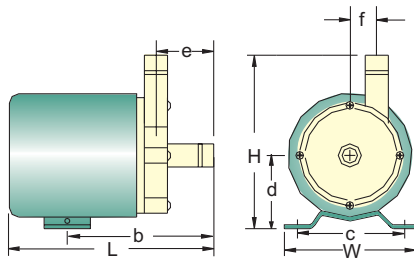
FLUOROPLASTIC MODEL	CONNECTIONS		MOTOR OUTPUT (HP)	MOTOR SPEED (RPM)	AMPS	MAX FLOW (GPM)	MAX HEAD (FT)	MAX SYS. PRESSURE (PSI)	SPECIFIC GRAVITY	WEIGHT (LBS)
	HOSE	NPTM								
WMD-30FX	---	1/2	1/16	3200	0.9	3.2	35.2	17.0	1.3 (1.5)	9.0
WMD-30FY	---	1/2	1/16	3200	0.9	3.2	26.0	17.0	1.5 (1.8)	9.0
WMD-30FZ	---	1/2	1/16	3200	0.9	2.6	24.0	21.3	1.9 (2.1)	9.0
MD-55FY	---	1	1/8	3300	1.9	17.1	25.6	21.3	1.3 (1.5)	11.9
MD-55FZ	---	1	1/8	3300	1.6	13.0	19.0	21.3	2.0 (2.2)	11.9
WMD-100FY	---	1	1/3	3450	*	36.0	38.0	31.2	1.3 (1.6)	*
MD-100FY	---	1	1/3	3300	3.4	35.7	37.7	31.2	1.3 (1.6)	18.7
WMD100-FZ	---	1	1/3	3450	*	28.0	27.2	31.2	1.9 (2.2)	*
MD-100FZ	---	1	1/3	3300	3.4	28.0	27.2	31.2	1.9 (2.2)	18.7

\* Varies with motor

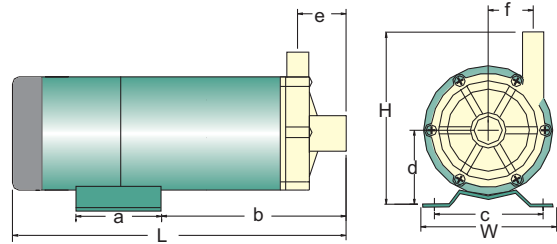


**Dimensions**

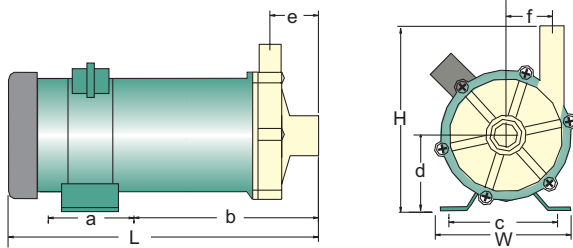
MD 6/10



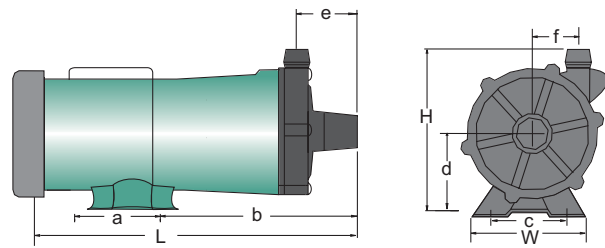
(W)MD 15/20/30/40



(W)MD 55/70/100



(W)MD 30/100 (Fluoroplastic)



Model	Connections		W	H	L	a	b	c	d	e	f
	Hose	NPT(M)									
<b>POLYPROPYLENE (MD-115V models only)</b>											
MD-6/10	1/2	---	2.91	3.62	4.09	1.18	2.87	2.36	1.77	1.22	0.67
WMD-15R(T)	1/2	1/2	3.50	4.26	9.46	2.37	4.15	2.50	1.94	1.52	0.85
MD-15R(T)	1/2	1/2	3.74	4.39	7.05	1.97	4.59	3.35	2.17	1.52	0.85
WMD-20R(T)	5/8	3/4	3.50	4.35	9.70	2.37	4.39	2.50	1.94	1.30	1.12
MD-20R(T)	5/8	3/4	4.17	4.19	7.99	1.73	4.05	3.54	1.77	1.30	1.12
WMD-20RX(T)	1	1	3.50	4.95	10.37	2.37	5.06	2.50	1.94	1.83	40+
MD-20RX(T)	1	1	4.17	4.75	8.66	1.73	4.45	3.54	1.74	1.83	40+
WMD-20RZ(T)	5/8	3/4	3.50	4.70	9.98	2.37	4.67	2.50	1.94	1.56	1.52
MD-20RZ(T)	5/8	3/4	4.17	4.92	8.31	1.73	4.17	3.54	2.17	1.56	1.52
WMD-30R(T)	3/4	3/4	3.50	4.70	11.65	2.37	5.72	2.50	1.94	1.89	1.22
MD-30R(T)	3/4	3/4	4.72	5.12	9.76	1.57	5.87	3.94	2.36	1.89	1.22
WMD-30RX(T)	1	1	3.50	5.09	11.89	2.37	5.96	2.50	1.94	1.97	40+
MD-30RX(T)	1	1	4.72	5.51	10.00	1.57	6.10	3.94	2.36	1.97	40+
WMD-30RZ(T)	5/8	3/4	3.50	4.70	10.97	2.37	5.04	2.50	1.94	1.56	1.53
MD-30RZ(T)	5/8	3/4	4.72	5.12	9.05	1.57	5.16	3.94	2.36	1.56	1.53
WMD-40R(T)	3/4	3/4	4.38	4.84	11.34	3.09	6.66	3.37	2.08	1.89	1.22
MD-40R(T)	3/4	3/4	4.72	5.12	9.85	1.57	5.87	3.94	2.36	1.89	1.22
WMD-40RX(T)	1	1	4.38	5.23	11.30	3.09	7.02	3.37	2.08	1.97	43+
MD-40RX(T)	1	1	4.72	5.51	10.08	1.57	6.10	3.94	2.36	1.97	43+
MD-55R(T)	1	1	4.72	6.10	10.77	1.57	7.05	3.94	2.56	2.42	1.57
MD-70R(T)	1	1	5.63	6.11	10.18	2.76	5.71	4.25	2.56	2.07	1.70
MD-70RZ(T)	3/4	3/4	5.63	6.50	9.72	2.76	5.24	4.25	2.56	1.65	1.87
MD-100R(T)	1	1	6.14	6.89	12.67	2.76	6.38	4.33	2.95	2.55	1.71
WMD-100R(T)	1	1	6.54	7.44	*	3.00	10.43	4.87	3.50	2.55	1.71
<b>FLUOROPLASTIC (MD-115V models only)</b>											
WMD-30F(X,Y,Z)	---	1/2	3.50	5.02	11.82	2.37	6.67	2.62	2.29	1.84	1.22
MD-30F(X,Y,Z)	---	1/2	4.72	5.12	9.09	1.57	6.77	3.94	2.36	1.53	1.52
MD-55F(Y,Z)	---	1	4.72	6.11	10.53	1.57	6.61	3.94	2.56	2.30	1.56
WMD-100F(Y,Z)	---	1	6.60	6.80	*	3.00	12.05	4.88	3.56	2.55	1.71
MD-100F(Y,Z)	---	1	6.14	6.89	12.67	2.76	6.38	4.33	2.95	2.55	1.71

\* Varies with motor  
Dimensions may vary with connection type.

+ Degrees offset from center  
Individual dimensional CAD drawings available upon request.

